Chapter 18
Integrating Process Inquiry and the Case Method in the Study of Information Systems Failure

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ABSTRACT
This chapter examines the integration of process inquiry and the case method in the study of Information Systems (IS) failure. Having acknowledged the prevalence of IS failure and the need for continued inquiry in this domain, the two predominant methods of inquiry, factor and process studies, are described along with the utility of both methods. The chapter then examines the nature of process inquiry and notes its utility and prevalence in the study of IS phenomena, and its potential applicability for inquiry into IS failure. The case study method is then briefly described along with its potential contribution when combined with process inquiry. The chapter then describes how the case method can provide an overall framework for the conduct of a process inquiry and presents an iterative six-stage research process model based on the case method to assist with the planning, design, preparation, data collection, data analysis, and reporting of findings.

1. INTRODUCTION
Information systems (IS) are computer based systems that people and organisations use to collect, filter, process, create and distribute data. The failure of IS is a recurring theme in both academic and practitioner literature since the beginning of the computer age (Avots, 1969; Bostrom & Heinen, 1977a; Powers & Dickson, 1973), however despite over 50 years of study IS failure continues to be a persistent and costly phenomenon as evidenced by both academic and practitioner studies. Studies of IS failure indicate an outright failure rate of IS projects of between 18% (Eveleens & Verhoef, 2010) and 50% (McDonagh, 2001). In addition, many projects not considered to be outright failures fall far below expectations. A study of 5,400 IS projects across a range of industries by McKinsey

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& Company in collaboration with the University of Oxford (Bloch, et al., 2012) suggests that half of all large IT projects (defined as those with initial price tags exceeding $15 million) run 45 percent over budget and 7 percent over time, while delivering 56 percent less value than predicted.

It is impossible to place a value on the total cost of IS failure because of the lack of a definitive definition and the fact that not all IS failures get into the public domain. Gartner estimate that total global spend on IS for 2014 will be $3.8 trillion. Even a conservative estimate of the percentage of this amount that is spent on underperforming IS represents a significant figure, which is a motivation and justification for continued inquiry in this area (Drevin, 2008).

Building on Dempsey & McDonagh (2014), this paper describes the integration of process inquiry and the case method for the study of IS failure. Process inquiry is the dynamic study of behaviour in organisations, focusing on sequences of events, activities and actions, which unfold over time and in context (Hinings, 1997; Langley & Tsoukas, 2010; Pettigrew, 1997). Process inquiry takes a dynamic rather than static worldview of things in the making (Langley & Tsoukas, 2010) and therefore is particularly suited to the study of IS development and implementation because of the temporally evolving, longitudinal, and creative nature of such processes. The use of the case method in support of a process inquiry facilitates the study of IS failure in a real life setting which allows the researcher to open the ‘black box’ of IS projects in order to better understand the broad range of actions, interactions, and reactions amongst actors, which are subject to a range of contextual factors, and contribute to failed outcomes.

This paper first examines the nature of IS failure and the main types of inquiry into the phenomenon. Noting the utility of process inquiry for the study of IS failure (which itself is a process) the paper then examines the nature of process and the utility of process inquiry for the study of IS failure. The paper then describes the value of integrating process inquiry with the case method, and concludes with a practical six stage guide to utilising the case method for the conduct of a process inquiry.

2. THE NATURE OF IS FAILURE

Despite over 50 years of research in the domain of IS failure it remains as persistent and costly as ever as evidenced in both academic and practitioner literature. One only has to examine reports of national government audit offices to get a picture of the extent of the problem. In fact Mahaney & Lederer (1999) propose that failure has become an accepted aspect of IS implementations, an ominous proposition given the ever increasing complexity of IS (Koh et al., 2011), and its growing importance in achieving and maintaining competitive superiority (Piccoli & Ives, 2005).

The concept of IS failure has not been well defined and there is no universally agreed definition (Al-ahmad et al., 2009; Hyvari, 2006; Sauer, 1993). Based on a survey and classification of the empirical literature on IS failure Lyytinen & Herschein (1987) identified four distinct types of IS failure: (1) Correspondence Failure: the system does not ‘co-respond’ to predefined design objectives, (2) Process Failure: a failure to produce a system at all or failure to produce a system within planned budgets and timeframe, (3) Interaction Failure: failure of the system to meet the needs of its users evidenced by the level of use and the degree of user satisfaction with the system, and (4) Expectation Failure: the inability of an IS to meet a specific stakeholder group’s expectations. Sauer (1993) expands on the model above by proposing an alternative definition of IS failure which is consistent with IS deployment as a process unfolding in a systematic web of social action. He proposes a model which he describes as a triangle of dependences among (1) the project organisation (who develop and maintain the IS); (2) the supporters (stakeholders who support the